MODELS

Compaq *StorageWorks*™ & *SANworks*™ for Windows 2000 Datacenter

Features

- Scalable Platform
- 8-way, 16-way, 32-way *ProLiant*™
- *StorageWorks* Modular Array8000/Enterprise Modular Array12000, Enterprise Backup Solution
- Reliability
- Fixed system configurations
- Certified solutions
- Change management
- Availability
- 4-node clustering
- High Availability hardware
- *SANworks* Secure Path v3.1
- Remote Insight Lights-out Edition
- Service and Support
- Named Technical Account Manager (TAM)
- Joint support and escalation
- Single point of accountability

PRODUCT DESCRIPTION / OVERVIEW

The Compaq Data Center Program provides enterprises with an integrated, pre-tested solution built from the powerful combination of Compaq industry standard *ProLiant* servers, Compaq *StorageWorks* storage hardware and Compaq *SANworks* storage software and an industry-leading portfolio of lifecycle services from Compaq. Enterprise Storage solutions, mission critical software, and an industry leading portfolio of lifecycle services from Compaq. Compaq's Data Center solutions deliver the scalability, availability and reliability typically available only from expensive proprietary solutions.

Compaq revolutionizes the economics of core enterprise computing with reliable, stable industry standard solutions.

CUSTOMER BENEFITS

Combined Resources

- The Compaq and Microsoft partnership brings experience in integrating, optimizing, and servicing the platform, Operating System and applications
  - Single point of contact for faster problem resolution (named Technical Account Manager)
  - Support queue jointly staffed by Microsoft and Compaq engineers
  - Certified configurations helps to ensure reliability and system uptime
- Integrated solution incorporates Microsoft and Compaq best practices to bring to market a cost effective, reliable, and highly available Data Center solution.

Reliability

- Industry standard Data Center Solutions from Compaq delivers the reliability, availability, and robustness of more expensive UNIX enterprise platforms
  - System configurations are rigorously tested and certified to deliver maximum reliability
  - Compaq's unmatched Windows integration expertise coupled with engineering excellence delivers reliable and stable Windows 2000 solution
  - Rigid change control promotes platform stability
  - Extensive enterprise-wide server and SAN management tools drive increasing levels of reliability into Data Center products

COMPAQ

CUSTOMER BENEFITS *(continued)*

Availability

- Compaq Data Center Solutions deliver the highest levels of availability through redundant, available hardware, value-added services and uptime guarantees.
  - The combination of StorageWorks hardware and SANworks software provides reliable, uninterrupted access to data and applications
  - StorageWorks Modular array and enterprise backup solutions provide data availability through the use of redundant hot-swappable components—controllers, power supplies, and drives
  - Compaq's VI-compliant ServerNet II server-server interconnect provides a redundant network fabric that ensures a data path is always available
  - The Compaq Data Center Solution includes 4-node clustering for the highest levels of availability with no single point of failure

Flexibility / Scalability

- The flexibility of the StorageWorks Modular Array8000 / Enterprise Modular Array12000, SAN architecture and SANworks software allows customers to quickly adapt to changes in user behavior and storage demands. It also eliminates storage as a bottleneck for rapid development and deployment of new applications.
  - With multi-OS and multi-platform support, users can share RAID arrays between multiple heterogeneous and homogenous servers. By enabling storage consolidation, the StorageWorks RAID Arrays give users the greatest return on their hardware investment as well as addressing the need for centralized management.
  - StorageWorks and SANworks multi-OS and multi-platform support also allows customers with a single storage architecture to service the needs of a heterogeneous Data Center
  - StorageWorks RAID Arrays allow customers to scale capacity, performance, and connectivity. The modular architecture allows customers to scale capacity and performance at the same time.
- Universal hardware components provides customers with unmatched investment protection
  - Compaq's use of universal components throughout the entire StorageWorks RAID Array product line and the ProLiant servers is unmatched in the computing industry today giving customers the highest return on their hardware investment

Management

- Compaq StorageWorks and SANworks management software solutions provide simple and consistent ways to manage the ever increasing complexity of their storage environment
  - SANworks SecurePath v3.1 provides high availability and high performance through multi-pathing
  - Secure Path
  - StorageWorks Command Console
  - Remote Insight Board Lights Out
- Change management
  - Compaq has created a Data Center-specific RA/MA8000, ESA/EMA12000 Operating System Solution Kit to ensure customers use the certified software drivers and solutions software. Data Center ACS versions also support the full heterogeneous capabilities of Compaq Modular Storage arrays in the Open SAN.
- Maximize the effectiveness of IT staff and resources
  - By consolidating on StorageWorks Modular Array8000 / Enterprise Modular Array12000, IT staff only has to maintain one hardware architecture to meet the needs of the entire enterprise. This reduces training issues, capacity planning, management needs and simplifies purchasing cycles.
  - Maximizes the utilization of network and servers by offloading data traffic from the LAN and providing software functions which allow servers to concentrate on production process
  - The Enterprise Backup Solution provides consolidated backup and restore for all the servers attached to the SAN

CUSTOMER BENEFITS *(continued)*

Service and Support

The industry's most comprehensive service and support program:

- Complete lifecycle services from design, planning, implementation, management and support for your environment
- CarePaq and Priority Service Plan packaged services that easily provide extended hardware warranty, software support, and installation and startup support. Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. In Canada, consult the Product Information Centre at 1-888-88-COMPAQ
- Storage solutions that dramatically reduce implementation risks, resulting in enhanced IT availability, predictability, and investment protection and positioning the customer to achieve competitive and financial advantage
- Accelerating the integration and management of an enterprise storage infrastructure, optimizing information access and maximizing business benefits and ROI
- 24 hours a day, 7 days a week technical support
- A global network of over 27,000 IT experts and more than 30,000 channel partners in more than 100 countries
- On-site assessment service ensures Data Center environments and business practices are optimized for availability

PRODUCT DESCRIPTION / OVERVIEW

Servers

SANworks

- Secure Path v3.1

ISV's

- VERITAS NetBackup 3.4

HARDWARE SUPPORT

- *ProLiant* 8/16/32-way servers
- High Availability – support for 2-node and 4-node clustering
- ServerNet II

StorageWorks

- MA8000/EMA12000
- RA8000/ESA12000 supported for existing installations converting to Compaq Data Center Solution
- Fiber Channel Switch (8 port or 16 port)
- Enterprise Backup Solution ESL9326D Tape Library, TL891 Tape Library, SSL2020 Tape Library
- *StorageWorks* Modular Data Router

DOCUMENTATION

The Compaq Datacenter Solution includes the following documentation, which is intended to describe all major features, their use, and to facilitate deployment of this solution

- RA/MA8000, ESA/EMA12000 Fibre Solution Software for Windows 2000 Datacenter Server Installation Guide
- Application Note: Storage Area Network Configurations for RA/MA8000 and ESA/EMA12000 on Windows 2000 Datacenter Server
- RA/MA8000, ESA/EMA12000 Fibre Solution Software for Windows 2000 Datacenter Server Release Notes
- RA/MA8000, ESA/EMA12000 Fibre Solution Software for Windows 2000 Datacenter Server SPD
- Switch/8 or Switch/16 Installation Manual, User Guide, and other standard product information
- Enterprise Backup Solution ESL9326 Installation Manual, User Guide, and other standard product information.

SOLUTION PRODUCT SERVICES

Compaq Services offers the most comprehensive Windows 2000 lifecycle services. These services begin with the initial deployment practices - from migration and integration of applications, platforms and storage, availability assessment and installation services through deployment management, on going support and operations management.

Compaq Services provides customers faster time to solution, reduced risk, reduced complexity, quality assurance, and improved ROI.

SOLUTION OPTIONS

***StorageWorks* and *SANworks* for Windows 2000 Datacenter**

Note: The StorageWorks and SANworks for the Compaq Data Center Solution are a pre-tested integrated configuration that include the following Compaq products.

Note: Refer to the QuickSpecs or Detailed Descriptions for the individual product specifications.

O/S Support Microsoft Windows 2000 Datacenter

DATACENTER SOLUTIONS KITS	RA/MA8000, ESA/EMA12000 Fibre Solution Sofware for Windows 2000 Datacenter Server One kit required	221133-B21
PRE-CONFIGURED STORAGE PACKAGES	EMA12000 D14 60Hz: Three controller enclosures and nine dual-bus 14 bay 1″ drive enclosures in a 42U Modular Storage Cabinet (Opal)	175990-B21
	EMA12000 D14 50Hz: Three controller enclosures and nine dual-bus 14 bay 1″ drive enclosures in a 42U Modular Storage Cabinet (Opal)	175990-B22
	EMA12000 S14 60Hz: One controller enclosure and six single-bus 14 bay 1″ drive enclosures in a 36U Modular Storage Cabinet (Opal)	175991-B21
	EMA12000 S14 50Hz: One controller enclosure and six single-bus 14 bay 1″ drive enclosures in a 36U Modular Storage Cabinet (Opal)	175991-B22
	EMA12000 S10 60Hz: One controller enclosure and six single-bus 10 bay 1.6″ drive enclosure in an 36U Modular Storage Cabinet (Opal)	175994-B21
	EMA12000 S10 50Hz: One controller enclosure and six single-bus 10 bay 1.6″ drive enclosure in an 36U Modular Storage Cabinet (Opal)	175994-B22
	MA8000 60Hz: One controller enclosure and three dual-bus 14 bay 1″ drive shelves in a 22U Modular Storage Cabinet (Opal)	175992-B21
	MA8000 50Hz: One controller enclosure and three dual-bus 14 bay 1″ drive shelves in a 22U Modular Storage Cabinet (Opal)	175992-B22
	EMA12000 Blue 60Hz: One controller enclosure and three dual-bus 14 bay 1″ drive shelves in a 41U Modular Storage Cabinet (Blue)	175993-B21
	EMA12000 Blue 50Hz: One controller enclosure and three dual-bus 14 bay 1″ drive shelves in a 41U Modular Storage Cabinet (Blue)	175993-B22
CONTROLLERS & ACS Software	ACS v8.5 Fibre Channel Switch Controller software. One required per HSG80 controller	128697-B21
	HSG80 RAID Controller w/ 256-MB Cache. Order two per controller shelf	176622-B21
	256-MB Cache optional	380674-B21
	Single external cache battery. Order one per controller.	135823-B21
	ACS software is available from the Data Center Solution Storage Paqs listed above	
DISK DRIVES	72.8-GB Ultra3 SCSI 10K 1.6″	176494-B21
	36.4-GB Ultra3 SCSI 10K 1″	176496-B22
	18.2-GB Ultra3 SCSI 10K RPM 1″	142673-B22
	9.1-GB Ultra3 SCSI 10K RPM 1″	142671-B22
	0.6″ drive extenders (4 pack)	148649-B21
HOST BUS ADAPTERS	64-Bit/33MHz PCI-to-Fibre Channel Host Bus Adapter with embedded Multi-Mode Optical Interface. Two per server for high availability, clustered configurations.	176479-B21

SOLUTION OPTIONS *(continued)*

STORAGE ENCLOSURES A LA CARTE	42U Modular Storage Cabinet (opal) 60Hz	180311-B21
	42U Modular Storage Cabinet (opal) 50Hz	180312-B22
	36U Modular Storage Cabinet (opal) 60Hz	180313-B21
	36U Modular Storage Cabinet (opal) 50Hz	180314-B22
	22U Modular Storage Cabinet (opal) 60 Hz	180315-B21
	22U Modular Storage Cabinet (opal) 50 Hz	180316-B22
	41U Modular Storage Cabinet (blue) 60Hz	180317-B21
	41U Modular Storage Cabinet (blue) 50Hz	180318-B22
	2200 4U controller enclosure, 2 power cords, 2 power supplies, EMU, 3 fans.	135820-B21
	4214R 3U single bus 14 bay drive enclosure	103381-001
	Single to dual bus 4214R upgrade kit	119829-B21
	4254 3U dual bus 14 bay drive enclosure	138151-001
	4314R single bus 14 bay drive enclosure	190209-001
	4354R dual bus 14 bus drive enclosure	190211-001
	4310R single bus 10 bay drive enclosure	174631-B21
	4350R dual bus 10 bay drive enclosure	174630-B21
	4214 Redundant power supply	119826-B21
	Ultra3 single bus I/O module	190212-B21
	Ultra3 dual bus I/O module	190213-B21
	1M SCSI Cable, 1 cable per 4314R/4210R shelf or 2 cables per 4354R/4350R shelf	168256-B21
SWITCHES and INTERCONNECT	Fibre Channel SAN Switch 8	158222-B21
	Fibre Channel SAN Switch 16	158223-B21
	Redundant power support for 8 & 16 port SAN switches	160407-B21
	Rackmount kit for 8 & 16 port SAN switches	167365-B21
	Fibre Channel Short-wave 2-Meter Cable	234457-B21
	Fibre Channel Short-wave 5-Meter Cable	234457-B22
	Fibre Channel Short-wave 15-Meter Cable	234457-B23
	Fibre Channel Short-wave 30-Meter Cable	234457-B24
	Fibre Channel Short-wave 50-Meter Cable	234457-B25
	Fibre Channel Short-wave GBIC.	380561-B21
	Connection Kit with three Short-wave GBICs and two 2 Meter cables	380579-B21
SANworks Software Solutions	SecurePath v3.1. Only if single-server in non-clustered environment. If two or more servers in a cluster, get SecurePath licenses from cluster kits.	165989-B21
High Availability Options	Compaq ProLiant Cluster High Availability Model F500 (HA/F500) Enhanced Kit	379937-B24
	Compaq ProLiant Cluster High Availability Model F500 (HA/F500) Enhanced DT Kit	164226-B21
Enterprise Backup Solution Options	Modular Data Router (HVD)	163082-B21
	Modular Data Router (LVD)	163083-B21
	Modular Data Router Option Kit (HVD)	152454-B21
	Modular Data Router Option Kit (LVD)	162969-B21

SOLUTION OPTIONS *(continued)*

Enterprise Backup Solution ESL 9000 Tape Library Options	ESL9236D Enterprise Library 6 35/70 Drive	146205-B23
	ESL9236D Enterprise Library 8 35/70 Drive	146205-B24
	ESL9236D Enterprise Library 10 35/70 Drive	146205-B25
	ESL9236D Enterprise Library 12 35/70 Drive	146205-B26
	ESL9236D Enterprise Library 14 35/70 Drive	146205-B27
	ESL9236D Enterprise Library 16 35/70 Drive	146205-B28
	Library Ready 35/70GB Hot-Swap Drive for ESL9326D	146209-B21
	ESL 9000 Pass Through Kit for Multi-Unit Connectivity	161268-B21
	StorageWorks Dual Channel Ultra-Wide Differential Library Host Bus Adapter Note: The StorageWorks Dual Channel Ultra-Wide Differential Library Host Bus Adapter is required to support the ESL9236D Library.	157299-B21
Enterprise Backup Solution TL891 Tape Library Options	TL891 DLT Library, 1 Drive, Table Top, FWD	120875-B21
	TL891 DLT Library, 2 Drives, Table Top, FWD	120875-B22
	TL891 DLT Library, 1 Drive, Rack Mount, FWD	120876-B21
	TL891 DLT Library, 2 Drives, Rack Mount, FWD	120876-B22
	Mini-Library Expansion Unit	120877-B21
	Mini-Library Data Unit	128670-B21
Enterprise Backup Solution AIT Tape Library Options	SSL2020 AIT Mini-Library 1 Drive, 20 slot Table Top	175195-B21
	SSL2020 AIT Mini-Library 2 Drive, 20 slot Table Top	175195-B22
	SSL2020 AIT Mini-Library 1 Drive, 20 slot Rackmount	175196-B21
	SSL2020 AIT Mini-Library 2 Drive, 20 slot Rackmount	175196-B22
	SSL2020 AIT Library Pass Through with Transport	175312-B21
	SSL2020 AIT Library Pass Through Extender	175312-B22
	AIT 50GB Drive Add-On LVD Drive for SSL2020 AIT Library	175197-B21
	19 Slot Magazine for SSL2020 AIT Library	175198-B21
	AIT 50-GB Data Cassette (5 pack)	152841-001
	AIT Cleaning Cassette	402374-B21
	Tabletop to Rackmount Upgrade Kit for SSL2020 AIT Library, Compaq Rack	175199-B21
	Tabletop to Rackmount Upgrade Kit for SSL2020 AIT Library, RETMA racks	175199-B22
	Wide Differential SCSI cable, 5M (one SCSI cable per two drives).	328215-001
	Wide Differential SCSI cable, 10M	328215-002
	Wide Differential cable, 15M	328215-003
	Wide Differential cable, 20M	328215-004
	DLT IV Data Cartridges (single pack)	295194-B21
	DLT IV Data Cartridges (7 pack)	295192-B21
	DLT Cleaning Cartridge	199704-001

SERVICE & SUPPORT, CAREPAQ AND WARRANTY INFORMATION

Availability Assessment Services

- Availability Assessment Service for Window 2000 Datacenter (2-5-2 Part Number of U.S.) QR-SMAAT-BA

Software Product Services

- Standalone telephone support
- Rights to new license version
- Media and documentation updates

Hardware Product Services

- Installation services
- On-site maintenance (includes warranty support)
- Response time upgrades during the warranty period
- Post-warranty coverage
- RAID Storage Set installation, startup, and configuration services

Note: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. In Canada, consult the Product Information Centre at 1-888-88-COMPAQ.

For additional hardware installation and maintenance information, please refer to the URLs listed below:

http://www.compaq.com/services/carepaq/cp_installation.html

http://www.compaq.com/services/carepaq/cp_hardware.html

http://www.compaq.com/services/storage

Note: These Web sites are available in English only.

CarePaq Warranty Upgrade Options

- Response - Upgrade on-site response from next business day to same day 4-hours
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days
- Duration - Select duration of coverage for a period of 1, 3, or 5 years

Product P/N	Carepaq P/N	Description of Service
MA8000/EMA 12000	FP-CS711-12	Priority Executive*
MA8000/EMA 12000 41U cabinets in configuration	FM-EDINS-IN	Hardware Installation
EMA12000 Dual bus I/O modules in configuration	FM-EBINS-IN	Hardware Installation
EMA12000 Single bus I/O modules in configuration	FM-EBINS-IN	Hardware Installation
RAID I&S-MA8000	FM-SMRSC-BD	Install subsystem, FC Hubs or FC Switches & Host Bus FC adapters, Create & initialization of StorageSets Install SWCC
RAID I&S – EMA12000	FM-SMRSC-BE	Install subsystem, FC Hubs or FC Switches & Host Bus FC adapters, Create & initialization of StorageSets Install SWCC
ESL9000 Enterprise Library 0-8 Drives (ESL9326)	FM-T6INS-IN	Hardware Installation
ESL9000 Enterprise Library 9-16 Drives	FM-T7INS-IN	Hardware Installation – ESL 9000 pass
Modular Data Router/FCTC		Installation is part of the Tape Library

SERVICE & SUPPORT, CAREPAQ AND WARRANTY INFORMATION *(continued)*

Priority Service Plans

- Combine hardware and software services in packages
- Offer a proactive approach to preventing problems from occurring
- Ensure fast effective resolution when problems do occur
- Achieve optimum performance and availability
- Ensure software/firmware is supported and updated
- Provide increasing levels of proactivity, responsiveness, and personalization
- Available in six service packages: Warranty Plus, Priority Plus, Priority, Priority Premier, Priority 24, Priority Executive
- Response – Upgrade on-site response for hardware from next business day all the way to same day 2 hours and for software from a maximum of 2 hours to 30 minutes
- Coverage – Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days
- Duration – Select duration of coverage from 1, 3 , or 5 years

CarePAQ Information

Sample part numbers:

- FM-**XHW-36, 3 year, uplift to 5 x 9, Next Day Response
- FM-**4HR-36, 3 year, uplift to 5 x 9, 4-hour Response
- FM-**724-36, 3 year, uplift to 7 x 24, 4-hour Response

** represents a two digit product specific code

ESL9000 Enterprise Library 9-16 drives (pass thru device) Hardware Installation	FM-T7INP-IN

- CarePAQ is defined as an upgrade to the product warranty attribute, available for a specific duration and hours of coverage.
- CarePAQ is not available for less than the product's warranty duration.
- CarePAQ is available for sale anytime during the warranty period for most products, but the commencement date will be the same as the Warranty Start Date (delivery date to end user customer). Proof of purchase may be required.
- CarePAQ services are prepaid.

Note: Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. In Canada, consult the Product Information Centre at 1-888-88-COMPAQ.

For additional CarePAQ (hardware & software) information, as well as orderable part numbers, please refer to the URL listed below:

http://www.compaq.com/services/carepaq/index.html

Note: This Web site is available in English only.

Components

The following brick level options/components do not have individual CarePAQs. These items will be included in product CarePAQs into which they are installed.

Disk Drives	Tape Drives	CD/DVD ROM	SCSI Hubs in SBBs	Adapters
Bus Converters	Backplane RAID Controllers	Power Supplies	Cabling	Fans

Compaq recommends Windows 2000 Professional for business.

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